

## New stations for *Physoderma* and *Ligniera*

J. S. KARLING

In the summer of 1933 while collecting aquatic plants, algae and fungi in the vicinity of New York City the author encountered a species of *Physoderma* and two of *Ligniera*, which, as far as he is aware, have never been reported from this particular locality. *Physoderma zae-maydis* was found fairly abundant on maize in a small field a short distance from the railway station at Cold Springs Harbor, Long Island. According to Lyman (1918) and Tisdale (1919) this parasitic chytrid has not been observed along the Atlantic coast further north than southern New Jersey, and its presence on Long Island suggests at least that it may have a more extensive distribution than is generally suspected. It grows readily in the leaves and sheaths of corn in New York City, as has been shown from inoculated garden plots at Columbia University, and it is not improbable that during the summer months it may extend into New England as well. The infected plants discovered on Long Island were badly spotted and streaked, and on being examined microscopically the cells were found to be filled with a tenuous rhizomycelium, sporangia and spindle-shaped organs. Whether or not the disease became sufficiently severe to have a pronounced effect on the yield is uncertain, since the corn had not yet reached the tassel stage at that time.

The two species of *Ligniera* referred to were found in the roots of *Alisma plantago-aquatica* and *Isoetes lacustris* from Van Cortlandt Park, New York City and Culver Lake, New Jersey respectively. Plasmodia and sporangia in several stages of development were very abundant in the roots, but no signs of hypertrophy were evident. The genus *Ligniera* was established by Maire and Tison (1909-1911) to include all species of the Plasmodiophorales which fail to produce hypertrophy of the host tissues, and in this respect the species which occur in *Alisma* and *Isoetes* are to be classed in this group. While the author doubts the validity of this genus, the generic name will nonetheless be employed in the present paper. These two species appear identical in size and development with *L. alismatis* and *L. isoetes* described by Schwartz (1914) and Palm (1918) from

the same hosts. *L. alismatis*, however, has been shown by Cook (1926) to be synonymous with *L. junci*, *L. graminis*, *L. bellidis*, and *L. menthae* as far as host relationship, general structure and development are concerned, and the name *L. junci* will be retained by the author for the species found in Van Cortlandt Park. There are no reports in the literature as far as I know of the occurrence of *L. junci* and *L. isoetes* in America, and the present discovery indicates that species of parasitic slime molds are widespread in their distribution. A more intensive study on the cytology and cross inoculation of these two species is now under way and will be reported later.

COLUMBIA UNIVERSITY, NEW YORK CITY

#### Bibliography

- Cook, W. R. I. The genus *Ligniera* Maire & Tison. Trans. Brit. Mycol. Soc. 11: 196-213. *Pls.* 8-9. 1926.
- Lyman, G. R. Plant disease survey work on the *Physoderma* disease of maize. Jour. Wash. Acad. Sci. 8: 43-44. 1918.
- Maire, R. and A. Tison. La cytologie des Plasmodiophoracées et la classe des Phytomyxinae. Ann. Mycol. 7: 226-253. *Pls.* 4-6. 1909.
- Maire, R. and A. Tison. Sur quelques Plasmodiophoracées non hypertrophiantes. Comp. Rend. Acad. Sci. Paris 152: 206-208. 1911.
- Palm, B. Sur une Plasmodiophoracée nouvelle, *Ligniera isoetes*. Svensk. Bot. Tidskr. 12: 228-232. 1918.
- Schwartz, E. J. The Plasmodiophoraceae and their relationship to the Mycetozoa and the Chytrideae. Ann. Bot. 28: 227-240. *Pl.* 12. 1914.
- Tisdale, W. H. *Physoderma* disease of corn. Jour. Agri. Res. 26: 137-154. *Pls.* A, B, 10-17. 1919.